

in some variegation cycles. Real DNA chemistry and DNA synthesizers may have larger errors than our hypothetical 5%. If $S_{err} > 0.05$, then we may not be able to vary six residues at once. Variation of 5 residues at once is certainly possible.

Example 2

Example II involves actual display of BPTI on M13 as a fusion to the mature gene VIII coat protein. Each of the DNA constructions was confirmed by restriction digestion analysis and DNA sequencing.

CONSTRUCTION OF THE
VIII-signal-sequence::BPTI::mature-VIII-coat-protein
DISPLAY VECTOR.

A. Operative cloning vectors (OCV).

The operative cloning vectors are M13 and phagemids derived from M13 or f1. The initial construction was in the f1-based phagemid pGEM-3Zf(-)^(TM) (Promega Corp., Madison, WI.).

A gene comprising, in order, : i) a modified lacUV5 promoter, ii) a Shine-Dalgarno sequence, iii) DNA encoding the M13 gene VIII signal sequence, iv) a sequence encoding mature BPTI, v) a sequence encoding the mature-M13-gene-VIII coat protein, vi) multiple stop codons, and vii) a transcription terminator, was constructed in accord with hypothetical example I. This gene is illustrated in Tables 101-105; each table shows the same DNA sequence with different features annotated. Some detailed changes from hypothetical